

A NEW SPECIES OF *PSEPHENOPS* GROUVELLE
(COLEOPTERA: PSEPHENIDAE) FROM MEXICO

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Abstract.—*Psephenops lupita*, new species, is described from specimens collected in a stream running through a cloud forest at Coatepec (1,200 m), Veracruz State, Mexico. The total number of described species assigned to the genus is now eight.

Resumen.—Se describe e ilustra a *Psephenops lupita*, n. sp., con base en especímenes colectados en un arroyo de agua dulce de un bosque nebuloso en Coatepec (1,200 m snm), Veracruz, México, aumentando el número total de especies descritas de este género a ocho.

Key Words: Psephenidae, new species, Veracruz State, Mexico

The genus *Psephenops* Grouvelle (= *Xexanchorinus* Grouvelle) is comprised of seven known species, with an apparently fragmentary distribution: *P. smithi* Grouvelle 1898 (Antillean); *P. grouvellei* Champion 1913 (Guatemala); *P. haitianus* Darlington 1936 (Haiti); *P. maculicollis* Darlington 1936 (Colombia and Costa Rica); *P. argentinensis* Delève 1967 (Argentina); *P. prestonae* Spangler 1990 (Costa Rica), and *P. mexicanus* Arce-Pérez and Novelo-Gutiérrez 2000 (Mexico). In this paper a new species is reported from Mexico.

Ten specimens, all males, were collected in a stream located at Coatepec Village (1,200 m altitude), Municipality of Coatepec; an additional specimen was collected in a stream located at Xico Viejo Village (1,800 m altitude), Municipality of Xico, Veracruz State, Mexico. Individuals were initially preserved in ethanol (80%) and some were later pinned; all collected material was examined. Male genitalia were extracted in ethanol, and potassium hydrox-

ide (KOH 5%) was used to clear genitalia to make illustrations. Microphotographs were taken with a scanning electron microscope JEOL, model JSM T20, with magnification of 200 \times .

Psephenops lupita Arce-Pérez,
new species
(Figs. 1–4)

Holotype male.—Body oval, depressed; integument black, with reddish-yellow reflections, completely covered with iridescent, reddish-yellow, short setae; head, antenna, pronotum and scutellum black; elytron dark reddish brown, slightly elevated at humeral region; antennal segments 1–2 yellow; legs with coxae, trochanters, and femora yellow, tibiae and tarsi black; ventrally reddish black, vestiture short, fine, and dense, grayish, with iridescent, yellow reflections; total length 3.80 mm, maximum humeral width 1.65 mm.

Head: Wider than long, transverse. Clypeus subrectangular, declivous at an an-

gle of less than 90 degrees from plane of frons, distal margin widely emarginate; fronto-clypeal surface with long, robust and stiff setae; vertex minutely punctate, with minute setae and a very shallow longitudinal furrow at middle. Antenna filiform, 11-segmented, scape larger than other segments, pedicel 0.57 length of scape and subglobose; third 0.64 length of scape; 7 flagellar segments small, apical segment acuminate. Eyes lateral, rounded, very prominent, dark reddish brown; postocular area amber yellow (Fig. 1). Labrum similar to clypeus but shorter; maxillary palpus 4-segmented, covered with long setae; segment 1 smallest; segments 2 and 4 largest; relative proportion of segments: 0.30, 0.90, 0.60, 1.0, basal segments 1–3 subconical; segment 4 oval, slightly depressed and ending in an inner subapical ridge. Labial palpus very short, 3-segmented; segments 1–2 rounded and wide, segment 3 smallest, subconical and dark, segment 2 largest, robust (Fig. 2).

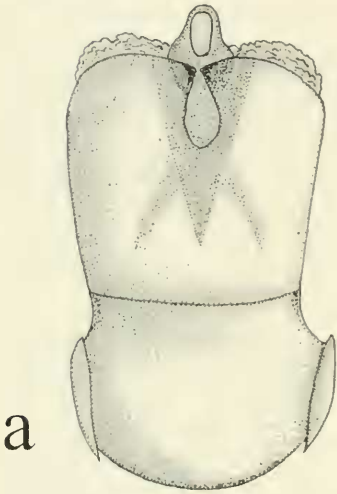
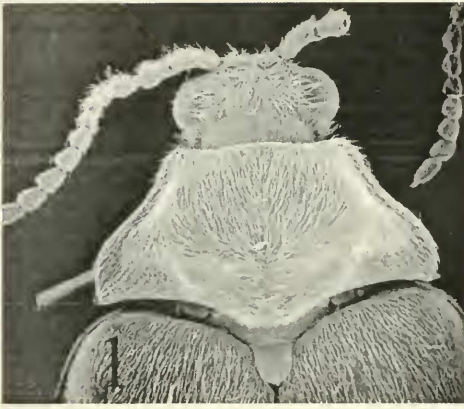
Thorax: Pronotum (Fig. 1) subtrapezoidal (posterior margin 1.5 mm, lateral margin 0.95 mm); anterior margin arcuate; posterior margin bisinuate and almost as wide as elytral base; lateral margins almost straight along anterior half and expanded laterally on posterior half; posterolateral angles subacute; all margins slightly thickened; pronotal disc with middorsal longitudinal carina weakly developed at distal half, and a wide, shallow, long depression at each side of carina; in lateral view, pronotal disc (except for posterolateral expansions) convex; pronotal surface with punctation finer than that of head, and covered with short, cineraceous-yellow setae, and long dark reddish setae, setae shorter than those of head; prosternum (Fig. 2) black, short and slightly carinate; with long, concave, lanceolate, and slightly carinate postcoxal process, which reaches anterior half of mesosternum. Mesonotum with scutellum short and black, with tip broadly round; elytron dark reddish brown, with short yellow setae and long reddish-yellow setae;

sides parallel on basal 0.75, then gradually converging posteriorly; base depressed on each side within humeri; surface without striae; length (from base to apex of suture) 2.65 mm; width (across humerus) 1.65 mm. Mesosternum, with wide groove for reception of prosternal process. Metasternum bulky with medium longitudinal groove deep between matacoxae.

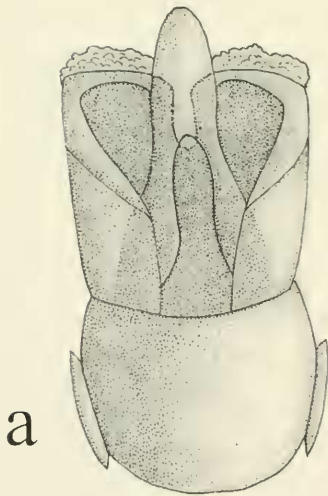
Legs: Procoxa globose, mesocoxa conical, metacoxa transverse; femora robust with dark yellowish setae; tibiae slender; metatibia as long as femur; protibia with distinct apical posterolateral denticle; tarsi, 5-segmented, tarsomeres 1 and 2 lobed ventrally, with thick spongelike vestiture with short setae; lobe of tarsomere 1 extending distally to 0.30 of tarsomere 2; tarsomere 2 longer, extending distally and completely covering area of tarsomeres 3, 4, and 0.20 of tarsomere 5; proportional length of tarsomeres: 0.40, 1.0, 0.25, 0.20, 0.85; a pair of long, curved, and slender apical claws present, each with small basal tooth.

Abdomen: Vestiture short, fine and dense. Seven visible sterna in relaxed specimens; usually segment 6 hidden under segment 5. Sternum 2 largest. Posterior margins of sterna 1 and 2 deeply concave at middle, sinuate at sides. Posterior margins of sterna 3 and 4 straight, that of sternum 5 with a wide and shallow concavity at each side of midline. Sternum 6 very short, posterior margin widely concave. Pygidial plate narrow, oval, as long as sternum 5, and densely covered with long and stiff reddish-yellow setae.

Genitalia (Figs. 3–4): Trilobate, total length 0.50 mm. Parameres very wide and subsquare, with apices truncated (Fig. 3a), in dorsoapical view notched apically (Fig. 3b), broadly emarginate and curved inward in ventrolateral view (Fig. 4b); length 0.26 mm. Penis longer than parameres, in ventral view fingerlike, widened in basal half (Fig. 4a), length 0.30 mm, bearing a longitudinal lance-shaped sclerite along base which measures 0.18 mm in length; dorsal area of phallobase concave (Fig. 3a); ventral por-



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4



Figs. 1-4. *Psephenops lupita*. 1, Details of head and pronotum showing mid-dorsal carina, dorsal view. 2, Detail of venter showing prosternal process. 3-4, Male genitalia. 3a, Dorsal view, showing phallobase and parameres. 3b, Microphotograph, dorsoapical view. 4a, Ventral view, showing long fingerlike penis widened in basal half. 4b, Microphotograph, ventrolateral view.

tion bulky, subcylindrical; length 0.20 mm, width 0.20 mm (Figs. 4a, b).

Female.—Unknown. (Apparently, females of this group larger and bulkier than males, but less frequently collected.)

Variation in paratype series.—Some specimens have reddish-brown elytra and in some the posterior margin of abdominal sternum 5 is not clearly convex at the middle. Measurements (in mm): total length of body, 3.75–3.85; maximum humeral width 1.65–1.80; length of pronotum 0.70–0.95, basal width 1.45–1.55; elytral length 2.60–2.70.

Discussion.—Males of *Psephenops lupita* may be distinguished from males of other species of the genus by the following combination of characters: Antenna filiform, elytra without conspicuous striae (moniliform in *P. mexicanus* and *P. maculicollis*, elytra with striae); pronotum and elytra without tubercles or protuberances (pronotum and elytra with tubercles and protuberances in *P. grouvellei*); tarsomeres 1–2 lobed, protibiae with denticle (tarsomeres 1–2–3 lobed, protibiae without denticle in *P. prestoniae*); tarsomeres 1–2 lobed, elytra without conspicuous striae (promesotarsomeres 1–2 lobed, metatarsomere 1 lobed, elytra with striae in *P. haitianus*); antenna filiform 11-segmented, elytra without conspicuous striae, penis fingerlike (antenna 8-segmented, elytra with striae, penis lanceolate in *P. argentinensis*). Apparently, *Psephenops lupita* is most similar to *Psephenops mexicanus*, but the two may be distinguished by the following combination of characteristics (those of *P. mexicanus* in parentheses): Total length 3.75–3.85 mm (3.15–3.55 mm), maximum humeral length 1.65–1.80 mm (1.45–1.70 mm), antennae filiform (moniliform), segments 1–2 yellow (black); legs with coxae, trochanters and femora yellow (black), parameres very wide and subsquare in dorsal view (slender and subtriangular), penis in ventral view fingerlike, widened in basal half (apical half subtriangular, with a small lateral toothlike projection).

Type material.—Holotype ♂ labeled: "MEXICO, Veracruz, Coatepec, Municipality Coatepec, 1,200 m, bosque mesófilo de montaña, río "Huehueyapan", 2-IV-1999, R. Arce col."; Paratypes: same data as holotype (2 ♂); same locality 19-IV-2000 (3 ♂); 26-IV-01 (3 ♂); and Xico Viejo, Municipality of Xico 26-VII-1998 (1 ♂). Holotype and paratypes deposited at Colección Entomológica, Instituto de Ecología, A.C., Xalapa, Veracruz, México.

Etymology.—This species is dedicated to my beloved wife Guadalupe Gómez Mendiola; from spanish Guadalupe, diminutive "Guadalupita, "lupita."

Habitat.—Adult males of *Psephenops lupita* were captured in a stream with rapid water flow, on stones covered with moss and aquatic phanerogams.

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LITERATURE CITED

- Arce-Pérez, R. and R. Novelo-Gutiérrez. 2000. First record of the genus *Psephenops* (Coleoptera: Psephenidae) from Mexico, with a description of a new species. *Entomological News* 111(3): 196–200.
- Champion, G. C. 1913. III. Notes on various Central American Coleoptera, with descriptions of new genera and species. *Transactions of the Entomological Society of London*, 1913: 62–169.
- Darlington, P. J. 1936. A list of the West Indian Dryopidae (Coleoptera) with a new genus and eight species, including one from Colombia. *Psyche* 43: 65–83.
- Delève, J. 1967. Contribution à l'étude des Dryopidea (Coleoptera). XIX. Notes diverses et descriptions d'espèces nouvelles. *Bulletin et Annales de la Société Entomologique Belgique* 103: 414–445.
- Grouvelle, A. H. 1898. Clavicornes de Grenada et de St. Vincent (Antilles) recoltés par M.H.H. Smith, et appartenant au Musée de Cambridge. *Notes from the Leyden Museum* 20: 35–48.
- Spangler, P. J. 1990. A new species and new record of the water-penny genus *Psephenops* (Coleoptera: Psephenidae) from Costa Rica. *Entomological News* 101(3): 137–139.